

SUBTERRANEA BRITANNICA

SECRETARY'S NEWSLETTER NO. 13

1994

WELCOME TO,

Mary Mills	London	Emrys Jones	Surrey
M. Gilman	Middlesex	J.J. Byers	Leeds
M.H. Dawes	Sussex	Martin Snow	Sussex
M. Stower	Birkenhead	Keith Ward	Essex
M.R. Hillary Shaw	London	R. Jameson	Liverpool
T. Butterworth	London	D. Rawlins	Berks
M. Scudamore	London	G.M. Brown	Berks
A.D. Sclater	London		

EDITORIAL

Sub. Brit. has frequent contact with the media. We have been featured in all national broadsheet newspapers and their associated supplements which has led to an increase in membership. By and large we have been satisfied with the reporting. Some of us have spoken on various radio programmes and although this has not elicited any enquiries about us, the experiences have been satisfactory. Sylvia Beamon has appeared on one interesting day-time television programme.

More recently we have appeared on two occasions on prime time television. The benefits to us on these occasions have been disputable.

Sylvia writes. "What is it about the underground that normally makes journalists and TV producers treat the whole subject with ridicule? The continental media accept research into the underground in exactly the same way as any other topic, but not here in this country. I have come to the conclusion we must be a nation of people who are afraid of the dark and that most suffer from claustrophobia therefore, most of those who do not, are the odd ones out, and certainly can't be normal. Heavy editing can alter the content to become unrecognisable and references to serious study have to go, for it does not fit onto the stereotype image of 'little goblins running in secret winding passages.' And always there has to be spooky music, no film would be complete without it .

It also seems that the opening of the Channel Tunnel also had to be denigrated. Every hiccup has to be reported with great glee, every reporter hoping to be the one who could carry the most hilarious or disastrous tale. Yet the tunnel is a magnificent engineering feat by man which should be praised, or if not praised, accepted for itself.

The BBC 2 programme on Bank Holiday Monday (2.5.94) given our society's title 'Subterranea Britannica' in my opinion was moist disappointing. What was the object of such a programme running up to the opening of the Channel Tunnel? Specifying how many find solace

underground is one thing, but inferences of fear is hardly what should be inferred for the media at this time. Is this a subversive action by some who wish Britain to stay an island by telling people, ' You won't want to go down the tunnel under the sea , it will frighten you!' Well you tell me what this was all about?"

In actuality very little non-fiction is taken seriously on evening TV - certainly not engineering or the pursuit of excellence. Brazenly incompetent politicians, meretricious rich businessmen , thug-like sportsmen from the sports with the highest monetary turnover (the sports England always lose at), criminals and talentless celebrities virtually complete the list. Oh, furry animals, birds and fishes etc. should be included, but this probably stems from the powerful influence of David Attenborough. And don't forget the spin-off of those abysmal pseudo-scientific, porn-by-stealth, programmes on animal and human behaviour. Television management gives the impression of kowtowing to the agents of the rich and powerful. If I were cowed prostituted and bereft of dignity I'd probably boost my morale by belittling minority interests while at the same time pandering to the vulgar, insensitive, unthinking masses.

The film Sylvia refers to, was launched into a muddy stew of puerile game shows, old American cartoons, unfunny comedies, voyeuristic pseudo-drama and trivialized news presentation by a free-lance team. We got off rather well. No inane female presenter and unlike religious and conventional archaeological programmes no pensioned-off comedian.

But from the point of view of representing Sub. Brit. as an organisation devoted to serious study I award the film nought out of ten. There is no evidence that the director, Geoff Dunlop had sympathy with his subject, which was the underground. Cinematographic and sound opportunities, which we created at considerable effort, were lost. I award 2 out of 10 for this.

However the director showed considerable talent in getting the people featuring in the programme to talk about themselves and reveal their motivations. I award 9 out of 10 for this.

We have also to face the strangely unpalatable fact, that as far as original TV films shown in the early evening go, it was one of the best - provided you weren't solely interested in the underground.

In answer to Sylvia's question, I presume the purpose of

THE COMBE DOWN AFFAIR

The Combe Down affair heads towards a conclusion within days. We must thank David Pollard, Owen Ward, and Brian Clarke for keeping us in touch with developments in that region.

The crucial latest steps are that Halcrow have issued their final plans, reports and conclusions. Bath City Council have issued a glossy brochure entitled "The way forward." "This brochure is a summary of the consultants' proposals and the reports including an Environmental Impact Assessment, surveys on the mines archaeology and bat colonies along with a comprehensive survey of the mines and their condition by Dr. Brian Hawkins."

No-one denies that inasmuch as the mines might cause surface collapses, there is a potential risk to the Combe Down community. The dispute is on the action to be taken. The glossy brochure discusses four options and comes down in favour of Halcrow's, "Once-and-for-all proposal."

It is a truism that if the mines were completely and properly filled the problem of stability would be eliminated. This is virtually the "once-and-for-all" solution (32% would remain unfilled but 58 % of this would be stabilised by shotcreting and the rest subjected to "localised repairs." Actually this is the same unimaginative proposal as antagonised the local community and archaeologists in the first place.

It is claimed in favour of this proposal that it is,

1. Cheaper at £21.6 million than the other three proposals. Do civil engineering firms usually get their estimates right?
2. The government will cough up the money under the Derelict Land Grant for this scheme only. But what attempts have been made to persuade the government to finance the other schemes?
3. That the proposed filling material, a grouting made of pulverised fuel ash and cement will, if mixed correctly, not cause contamination of the local water.

PFA is the ash from power stations resulting from the burning of pulverised coal and contains traces of dangerous metals such as, beryllium, arsenic, cadmium and mercury. It is admitted by Halcrow that in certain circumstances these dangerous metals could leach out of the grouting into the water supply. Halcrow implies that it will mix and inject the grouting under conditions which prevent this. (How can anyone be sure, that over the five year period estimated for the job, that these conditions will be adhered to strictly?)

the film was to inject a little light-hearted artistry into a celebration of an engineering achievement.

Of the future, the only people in a position to make a film about Sub. Brit. activities are its own members. Do we have a director and cameraman?

As a footnote, despite the final outcome, it was fun taking part in the film and the production team consisted of very pleasant people.

PFA grouting was tested by the National Environmental Technology Centre of AEA Technology at Culham specifically because of the concerns at Combe Down. These were accelerated laboratory tests and Halcrow have used the results to argue that PFA is safe under conditions far removed from those obtaining in a laboratory. The information which is really needed is the leaching properties of PFA grouting over considerable periods of time in various underground conditions. In actual fact Halcrow did examine the grouting which has been supporting the M23 motorway for 20 years - but not for leaching properties. They did however come to the conclusion that the grouting was still structurally sound. Local cavers who have noted the material eroding away will wonder what time scale Halcrow is using. Although the M23 is in no danger of immediate collapse local cavers will not be easily convinced that the grouting is not being eroded away by currents of ground water flowing down onto it.

The Bath Stone Company propose that the grouting is made of crushed limestone rock and cement. Crushed limestone would be brought to Combe Down by conveyor from Stoke Hill mine or Midford Hill Farm. If the Combe Down mines quarries are to be filled at all, this is the best option for local residents since it obviates the use of many lorries and much plant in their area. Bath City Council do not advise this option since it severely impacts on the environment along its route. Also it would cost up to twice as much as the once-and-for-all plan.

The option Sub. Brit. would like to see adopted is termed "minimal stabilisation" by the council. The council agree with, and in fact stress the archaeological importance of the site. They cannot, however agree that this option, which is to support only those parts of the quarries which are in immediate danger of collapse, while monitoring the rest for ever and effecting remedial work when necessary, is feasible. The immediate filling of the high risk areas could not be done underground as with the preferred option. This is because to reach the high risk areas workmen would have to pass through galleries regarded by HM inspectorate of mines as insecure - they will not permit it. In this case, the residents would be subjected to considerable stress since the minimal areas being filled would have to be filled from the surface. Also HMIM would not allow anyone underground even after the minimal stabilisation to perform monitoring. Even if monitoring occurred it could not easily predict collapses. Finally this scheme will not be supported by the govern-

ment's Derelict Land Grant as far as future remedial work is concerned. Individual property owners would have to foot the bill for work under their property which might become necessary in future times.

From the logical point of view the Council's arguments are inconsistent. The reason for stabilising the mines in the first place is that they have been pronounced as unstable and likely to collapse. But the Council admit that little or no collapses have occurred yet. They then say it is useless monitoring the mines because it won't tell what parts are likely to collapse. But they only arrived at the conclusion that the mines were unstable by monitoring their condition in the first place! Also they are not going to fill all the mines but leave parts which are designated as stable - although they have just admitted they can't distinguish between stable and unstable parts. Also if they do leave any of the underground unfilled it will still have to be monitored - although they say this will be ineffectual. Basically the stability of stone mines is little un-

derstood.

It is tempting for local councils to apply for Derelict Land Grants since they can get work done at no expense to the local Council Tax payers. It comes out of national funds. Derelict Land Grants seem especially available for filling mines - even in areas, such as Combe Down which are not derelict.

The argument that the government will only finance the once-and-for-all solution is not entirely correct. Governments are not always inflexible. If it was put to government that Bath City Council wanted to preserve an important national and international monument of archaeological importance, intensive discussion might take place. Also funds might be available from the EC. There is no evidence that the council have pursued their responsibilities in this way. There is a danger that a small-time Council will use national money to eliminate an internationally important archaeological site.



This remote chambered cairn at Camster in Caithness is one of two which have been restored and a minor but interesting underground experience may be had by crawling to the inside chamber. Chambered cairns are communal burial places constructed 4000-2500 BC. There are sites of at least 78 in Caithness.

MOST TRACES OF BRITAIN'S COAL MINING INDUSTRY MAY SOON BE LOST

British Archaeological News, No.13 May 1994 quotes Patrick McLoughlin, the Technology Minister as saying it was not necessary to go underground to appreciate the conditions in which miners had to work. (Most fatuous remark of the century?) His remarks followed a government refusal to support a cross-party amendment to the coal industry bill to secure the future of mining museums after privatisation.

Only The Yorkshire Mining Museum near Wakefield and The Big Pit museum near Blaenafon are involved since Chatterley Whitfield went into liquidation.

Dismay at this prospect caused Lord Montague, formerly of English Heritage and Derek Ezra formerly of the National Coal Board to write to the Times. 9th May 1994.

GREAT HORRINGER AND EASTGATE CAVES , BURY ST. EDMONDS

Sylvia Beamon has sent an article from the East Anglian Magazine dating back to Feb. 1952. Vol. 11, No. 6. Brian Francis describes bat recording underground with Owen Gilbert.

At Horringer there are two pits linked by a system of tunnels dug in the upper chalk. At Eastgate tunnels radiate from just one pit. A plan is given of the Horringer system and the author estimates that chalk extraction dates back 250 years. He assumes the chalk was used for lime burning and mentions kilns operating at Eastgate in the 17th century.

More information on these caves would be of interest.

CAVE DWELLER RESISTS EVICTION

Thomas Hill built a four storey house out of the rock face hanging above his cottage by the River Nidd in Knaresborough, North Yorkshire. Above this he constructed three acres of hanging gardens stretching to the top of the cliffs. That work was finished in 1791 and now the house is a Grade II listed folly.

In 1916 it was purchased by Ampleforth Abbey Trust but Nellie Hemshall who died about the end of 1992 aged 97 lived in it all of her life. Harrogate Borough Council now say the house, unless modernised, is unfit for human habitation.

One of those small man, in this case woman, versus bureaucracy cases has developed because the Trust cannot afford the £50,000 required to refurbish the house and Nancy Buckle, Nellie Hemshall's niece, who has also lived in the house since the 1970s refuses to leave despite being offered a Council flat. National publicity has so far failed to help her. The Times. 29.6.94

CAVE DWELLER DIES

A middle-aged man who turned a cave in Dale Abbey near Ilkeston, into a home, died from hypothermia and lay undiscovered for a week. Cambridge Evening News. April 1994

WW I TUNNELS NEARLY CAUSE BAD RAILWAY ACCIDENT IN FRANCE

A French TGV train travelling at 183mph encountered a gaping hole in the track ballast last December at Ablaincourt-Pressoir. Only correct action by the driver and the inherent stability of the train saved all but a derailment. The reason for the hole was the collapse of tunnels dug under no man's land by the opposing armies during the 1914-18 war. No plans exist of such tunnels and although the tunnels responsible for this collapse were plugged it is likely that many more such tunnels lie undiscovered.

Reported in Modern Railways.

CORBY

"Housing for the influx of thousands of men in 1933-34 was non-existent...During the 1933-1934 winter it was thought that up to three hundred men had nowhere to sleep. The village residents were totally overwhelmed with this massive population explosion and many took in lodgers. At night time the police gave the village extra protection while men were looking for somewhere to stay. For many of the workers there was no alternative but to sleep in hedgerows, particularly Stanion Lane where some former underground ironstone workings offered good shelter, whilst other caves were dug out of embankment faces and would have a chimney pipe sticking out of the entrance. One cave was renown as being lined with cardboard and covered with wallpaper; such homes as they were, served in some cases as a base for years rather

than months."

Extracted from, Corby. A pictorial history. Ron Sismey. Phillimore 1993. ISBN 0 85033 861 1. £11.95

The extract refers to the birth of Stewart and Lloyd's iron, steel and tube making plant. It died in 1979 with the loss of many thousands of jobs. There is now little left in Corby of its' steel making past. What was once the largest steel making plant in Europe, containing 100 miles railway track with its' associated ironstone pits have been virtually obliterated. £130 million from the European community and other sources were used to encourage the establishment of a broader based economy. It was the local joke that large numbers of former steel workers turned to taxi driving.

WARTIME UNDERGROUND SHADOW FACTORY AT YEADON, LEEDS. (OS Sheet 104, SE 225 410)

Yeadon airfield opened in 1931 as Leeds/Bradford Municipal Aerodrome for club flying. It then progressed firstly to accommodate commercial operators and in 1936 to accommodate the RAF. But in 1942 the airfield was transferred to the Ministry of Aircraft production and the nearby shadow factory was taken over by Avro. A factory was built at the north end of the runway and some of the buildings were underground. With 1,514,190 sq. feet of floor space it was probably the largest factory in Europe under one roof. The whole area was camouflaged to look like farm land, complete with cows and ducks etc. from the air.

The RAF left in 1957 but the factory still seems to exist although the various modern businesses now operate from the site. It is obvious that a very interesting story can be written about the factory and hopefully people will send me more information.

Thanks to JR. Byars for the information.

THE THIRTY NINE STEPS

Remember John Buchan's book? In Kent Underground Research Group's Research Report 11, 1994, Paul Wells identifies them as a set of stairs leading from a private property at North Foreland, near Broadstairs in Kent to the beach. His evidence is that John Buchan stayed at the house, St.Cuby, at the top of the stairs in 1914 and a German spy had been captured nearby. Also the ancient name of Broadstairs is Bradstow and the story is set near a town

called Bradgate. (Well I believe it!). Finally Paul Wells has observed that the appearance of the steps is as described in the book, except there are now 108 steps. Originally there were 78 steps but they were rebuilt. 78 would have been too many to fit into Buchan's plot.

WARNING TO POTENTIAL AUTHORS

Overjoyed on being awarded £500 advance for writing a book on the history of mining machinery, quarryman Hinton Sheryn kissed a female acquaintance on the lips in the street in Bideford, Devon. She sued him for assault and he lost his £500 in compensation for the sleepless night she suffered.

The Observer, 4.9.94 also goes on to tell of a Wisconsin man who bedded a woman who suffered from multiple personality disorder. Her personality for the night enjoyed the experience but the other 45 personalities found out and had him arrested.

Something to bear in mind on Study Weekends?

THE CAVES OF ETHIOPIA

Our member in Ethiopia, Elizabeth Asfaw, has sent the report of the 1972 British Speleological Expedition to Ethiopia. It is very interestingly written and contains a good geological summary. It may be borrowed for the cost of the postage from your editor.

Although largely outside Sub. Brit's terms of interest (man-made and man-used underground structures) the report also briefly includes man's activities in the caves. In addition there is information on cave-dwelling bats although the explorers had no qualms in disturbing them (should they have had?) and there is no mention of health hazards connected with bat guano.

Since this illustrated report describes numerous caves in great detail, bona fide cavers will probably find it interesting. Especially the parts where the explorers encounter creatures like snakes and warthogs underground.

Ethiopia's largest cave is Sof Omar with a total length of 15km of passages in Antalo limestone. Throughout the country the Antalo limestone is the most important cave bearing formation. It is in the Bale region which is south of the rift valley which divides Ethiopia. There are 42 entrances to this cave but only four or five are useful.

Apart from mentioning that the local villagers use the cave as a shrine and burn incense the report says nothing of the interaction of the cave with mankind. Nevertheless the cave has a tourist function and it would be interesting to have information on it.

The association of Ethiopian caves with religion would also be a rewarding subject to pursue in detail. Sof Omar is named after a holy man and another cave, Nur Mohamed acquired its name in a similar fashion. In the totally different Tigre region in the north of the country, where there are caves in both the limestone and the sandstone, there is a cave entrance next to a Coptic Christian church at Kohen. I would not care to explore it because it contains the skeletons of past priests of the church. The Kworiara Valley offers an even more gruesome cave where human skeletons have to be crawled over to enter.

In his book *Living underground*, David Kempe pertinently says, "One of the most remarkable groups of rock-hewn churches are those of the Tegra and Wallo provinces of northwest Ethiopia. Here there are hundreds of

orthodox Christian shrines and churches carved in the Middle Ages out of the pink tuff mesas, called *ambas*, especially around Lalibela, and famous for their Byzantine frescos. They were founded by the Syrian, Frumentius, who was sold as a slave but later became a saint, known as Aba Salama or Father of Peace, and founded the monastery bearing his name. He converted the ruler of the Ethiopian Kingdom of Aksum to Christianity in 330 AD and their sect become similar to the Egyptian Coptic Church. Aksum was the cradle of Ethiopian civilisation: Haile Selassie claimed descendency from its' ruler. At Lalibela the Abba Salama Monastery is supposed to have the Abba's bones contained in a nearby niche more than 500 feet above, a terrifying climb up a rock chimney and a 60-foot chain. The most famous of all the religious buildings are the eleven churches here, including Emmanuel, St. Mary and St. George's, while in the north there are more, such as Guh and Qorqor. How the large stone blocks were quarried, carted and raised up to build the monasteries and churches - the highest, now in ruins, was 110 feet tall - is not known."

In the Harrer region to the east of the country the caves are noted for their black and red cave paintings can anyone give me information about these?

The caves in Ethiopia also provide witness to man's inhumanity to man. For example, back in the Tigre region, vase cave contains broken vases left by women water carriers after an inter-tribal war at the beginning of this century. At Melkay Mara in the Bale region and Serkema in the Harrer region there is evidence of the Italian military occupation in WWII

FIRTH OF FORTH TUNNEL

Reading Paul Sowan's article in news letter No 12 reminded me of another doubtful tunnel project which, in passing, may be of interest to those who may like to know of one of the solutions put forward for getting trains across the Firth of Forth; prior to the building of the Forth Bridge in 1882 and finished for traffic in 1890.

Many and various schemes were put forward in response to divers competitions run by the two railway companies who agreed to combine and share the solution, and one of these was the cockeyed proposal to construct two tunnels quaintly described as, '... one for coming and one for going', the only thing of any value in the entire idea being that whichever bank you are on that statement held good.

At first glance on a map it may be thought it was a fairly minor undertaking when compared with the Irish Channel and Solent schemes as the site chosen was in the area of the present bridge where the river is at its narrowest for miles. Further study of the contour lines on either bank will shew that there is high ground at both banks of some 150 feet above high water mark; this in fact

coincides nicely with the Admiralty's requirements that this height be maintained of any bridge built to allow their tall ships of 1880 free passage to Rosythe Dockyard, immediately upstream of the area, of course.

The actual details of the tunnel seem to be unknown, but what is known is the depth of the river bed is 200 feet which added to the Admiralty's requirements, diameter of tunnel, say 20 feet plus cover of tunnel from invert, we arrive at a figure somewhere about 400 feet below the general level of high ground on either banks.

Now it is well known that apart from leaves or special snow on the line (the site is in Scotland remember) any slight rise from the horizontal poses severe traction problems to rail transport. It is, of course, easy to get over this problem by making the angle of the gradient shallow enough for the train to work, in this case about a mile or two long, with the subsequent ruin of much rich farmland and total disruption for a great distance around by earth removal of the resulting trench, all in the service of a tunnel of about half a mile long.

In any case the scheme would have run into great engineering problems as it was not until the piers, on which the present 51,000 ton bridge stands, were being constructed did it become known that the stratum below the river bed was found to change from mud, boulder clay of varying firmness, to rock and back again almost by the yard; of the twelve piers needed one was sunk to a depth of 89 feet before meeting firm ground, while a partner some 140 feet away was only 37 feet deep. Another potential stopper existed, which was not found until a cutting through a mound on the north bank was made for the track leaving the present bridge, was that the very dense rock they were removing was the solidified core of an extinct volcano. It is supposed that this core would have been hard to miss as the vent was most likely much wider 400 feet down from the present ground level and blasting at that level could have been a problem in a tunnel; more so if the giant was only dormant.

An historical note. So good was this rock that the cutting was widened in order to supply the cemented random rubble infill for part or the piers.

The alternative to removing vast quantities of overburden in making the enormous trench would have been to extend the tunnel to near ground level thus bringing the whole scheme within the remit of Sub Brit, for most likely the whole scheme would have been abandoned before completion, ready for members to find later.

A further historical note concerns a later scheme put up, and later adopted, was for the use of a suspension bridge designed by Sir Thomas Bouch, and overseen by him. He had succeeded in overcoming suspension bridge difficulties where moving concentrated heavy loads resulted in vertical flexing of the deck and where at one moment the train would go rapidly downhill followed closely by it climbing steeply upward: a hundred years later Disney was to exploit this to advantage, except in France.

Work was started but stopped very suddenly with only a few piers being built in the river, on the news that the famous Tay Bridge, which he had also designed, was

blown down in a gale one December night with the loss of about twenty lives and a complete train. A navigation light, which on the one remaining pier stump can be seen from the north side at ground level, is a sorry little monument to a clever, but sadly, too trusting engineer.

Alfred Grandjean 1994.

FOLLIES AND GROTTO

Warmley grotto

Sub. Brit. members who attended the 1992 International Study Weekend will remember visiting Warmley historic garden which was built by William Campion in the 18th century and included his copper foundry. The deteriorated grotto, made of cement and copper slag, was our focus of interest. The garden is mostly owned by the Kingswood Borough Council but Kingswood Heritage Museum Trust commissioned Lesley Howes, a garden archaeologist formerly associated with Pains Hill and its' grotto, to write a report on the future management of the site. It is estimated that £15,490 would be required to restore the site.

Follies Winter/Spring 1994

Tunnels on cliff path near Porlock

Barbara and Malcolm Tadd recall walking to Culbone church from near Porlock, in Somerset, along the coastal path. There are two short tunnels along the route which are the last vestige of Ashley Combe. The estate was developed by Lord King after his marriage in 1835. A house and garden were built in Renaissance style. Lord King had toured the Italian Lake District on the 'grand tour' and as he was an engineer, garden terraces were constructed at Ashley Combe. The house was demolished c. 1960 and the gardens are now overgrown,

The object of the tunnels was to conceal tradesmen since they would otherwise spoil the view from the house down the slopes to Hurlestone Point.

The gatehouse to the estate survives and the tradesmen would pass by it and find their way to the back door of the house through the tunnels

Follies Winter/Spring 1994

Middleton Hall, Dyfed.

Middleton Hall was destroyed by fire in 1931 and its' remains cleared in 1951.

Sir William Paxton landscaped a park and ornamental woodland near the village of Llanarthney overlooking the valley of the river Towy. His memorial tower to Lord Nelson is well known but the park itself is not. As many of the springs on the estate were said to possess chalybeate properties Paxton had ambitions to create a spa at Middleton but this was not successful.

Restoration of the estate by Dyfed County Council has produced lakes, canals, waterfalls, foundations of a bath-house, a holy well and an ice-house. The ice-house is considered to be one of the finest in Wales.

"...fine barrel-vaulted brick passages (formerly fitted with three doors) and a brick-domed chamber, which is partly sunk into the hillside..."

Aerial photographs taken by the RAF in the 1930s had failed to reveal it.

The park is now open to the public.

Follies Winter/Spring 1994

See also , "A once fine mansion", Archaeology Today, Sept. 1987

Ice-house in Brighton

"It was no small advantage to live within six miles of so large a town (at Saddlescombe) but what a different Brighton it was in the sixties. It was quite a matter of course when a team of six red oxen lumbered up North Street bringing a wagon load of exceedingly dirty ice from a farmyard pond to be stored up for the summer in an 'ice-house' at the foot of Church Hill."

Sussex IAS. Spring 1994. Quote from Sussex County Magazine, No. 7, Vol. IX, July 1935.

Scoveston Fort - Milford Haven OS Sheet 157 SM 944 066

A Palmeston fort but the only inland one. Overgrown but bank, ditch, quarters, munitions store and tennis courts are still visible.

Follies Winter/Spring 1994

Boughton Park.

Boughton Park north of Northampton is famous for its follies built under William Wentworth, 2nd earl of Stafford (1722-91). Sadly, as is frequently the case nowadays, it is threatened by road building. Fortunately the cave-like grotto has just been listed, Grade II by the Department of National Heritage.

The schedule claims it to be c.1770s made of coursed limestone rubble under an earth mound. It is also built over a natural petrifying spring. Local tradition suggests that it existed before the 1770s. Charles I was supposed to have bathed here and used the grotto as a dressing room.

Boughton Park also includes St. John's Spring which is an old pagan holy well

Follies. Vol. 6, No. 2. Autumn 1994

Rocks, East Woodland, Bath Avon.

The private garden at this location is to be restored and opened to the public. It includes a cave and a grotto.

Follies. Vol. 6, No. 2. Autumn 1994

Underground restaurant

A Victorian reservoir on Pewley Hill in Guildford may be turned into an underground restaurant by businessman Ken Joyes.

Follies. Vol. 6, No. 2. Autumn 1994

Brighton

There is mention that the collection of the Wayside museum in Brighton has been dispersed. The grounds of this museum were said at one time (and may still have) a series of subterranean grottos cut into the chalk. Does anyone no where this is or have any information about it ?

Follies. Vol. 6, No. 2. Autumn 1994

Index

The index to the series of Follies (published by the Folly Fellowship) contains 40 references to grottos, one of Williamson's tunnel Liverpool and one to Banwell's cave, Avon.

LONDON UNDERGROUND LIKELY TO FAIL WITH SOME SERVICES

London Regional Passengers Committee warns about under-investment in tunnels, pumps, signals etc. This is prompted by a report from London Transport about a cracked cast iron beam near Sloane Square station.

The committee has warned Steve Norris the Minister for Transport in London that some sort of disastrous curtailment of services is likely.

Eric Midwinter says, "I hope it won't take the collapse of the tunnel of at Sloane Square, or a major flood some where else on the system caused by a life-expired pumping equipment, for the Government to come to its' senses.

Underground News. No. 393 Sept. 1994

MARGATE CAVES

Excavations at Margate caves by KURG are described involving "the well", two chambers known as "dungeons" and a further current excavation. (Volunteers to help are invited.) A short history of the caves as far as is known is given and a 'rapid re-survey' by Rod Le Gear.

Rod Le Gear takes the view that the caves were chalk mines possibly started some time after the 13th century. [Subsequent uses are speculated upon.

Those who are familiar with the caves in the first place are likely to obtain most benefit from these articles.

KURG Research Report No.11.

WWI AIR-RAID SHELTER

A. Runacre describes with a drawing, a chalk passage under a Victorian House in Ramsgate (TR 3763 6481). She believes it to be a WW1 air-raid shelter.

KURG Research Report No.11.

WWII V2 ROCKET LAUNCHING ACROSS THE CHANNEL

A. Runacre, P. Wells and A. Miles describe Wizernes.

Wizernes VII rocket launching site is described in Hitler's Rocket Sites, Philip Henskill., Robert Hale, London, 1985, and the authors draw on this book.

Wizernes V2 launching site is near St. Omer in the Pas de Calais and is easily accessible from Kent which allowed the authors to make two visits. It was started in a former chalk pit in 1943 but was never finished.

Its' features include an 80 feet high 25 feet thick concrete bomb proof dome, a railway tunnel with side galleries, an abandoned engine and bomb damage including chalk landslides.

The authors include their own survey of the site with the report.

KURG Research Report No. 11.

SECRET TUNNEL, TICEHURST SUSSEX

A 'secret tunnel' beneath Wardsbrook, Ticehurst, Sussex is in fact a 16th century barrel vaulted toilet culvert, 1.05m tall, 50m long. It was still in use in Victorian times serving a water closet. It eventually emptied into a nearby stream.

Field Archaeology Unit News. No. 4. Spring 1994

CELLAR AT WARNHAM PLACE, SUSSEX

At Warnham Place, near Horsham in West Sussex a brick and sandstone lined cellar of a long gone 18th century mansion has been uncovered. The site has been evaluated for a golf course and the cellar will be preserved

Field Archaeology Unit News. No. 4. Spring 1994.

QUARRY AT TOG HILL

This underground oolitic limestone quarry is outside the area in which historians and geologists say Bath Stone was. However the stone and way it was worked are the same. There were apparently a number of quarries in the locality, most of them insignificant vertical shafts without horizontal headings. This one is more extensive and was heard of because a lorry fell into a poorly capped or open vertical shaft when tipping rubble.

To find the site from Bath drive over Lansdown and keep going to the motorway junction at Tormarton. Cross over the motorway, then turn right opposite the entrance to Dodington House. Take the second left turning. Look for an area of trees on top.

A shallowly inclined surface roadway leads to a level entrance on the right, blocked by drystone walling, and a larger level entrance ahead poorly gated. At the top of the approach roadway are pieces of stone apparently quarried then left stacked among the trees. Part way down the roadway on the left is a raised masonry platform stated to have been shown in an old photograph with a weighbridge hut on top.

The entrances are of unlined natural stone, roughly hewn. The larger one has a space opened out inside with a single drystone built pillar supporting the roof and various underground roadways leading off. These all have very clearly defined ruts on their floors, rather narrowly spaced about 3ft apart. Numerous headings are backfilled to varying levels, others with neatly stepped floors. The workings are at a very shallow depth with as little as 15 feet of overburden.

Evidence of quarrying over a considerable period can be seen. Some parts are worked by splitting away chunks, leaving very irregular walls. There are very precise, almost architectural linings of waste stone in some parts, built around short wooden props near the ceiling. Other areas have been sawn with a "frig bob" and very roughly backfilled along the sides of main roadways. This is typical of later methods used in Bath Stone quarries.

The open vertical shaft has a rubble cone beneath and

is almost square in shape about 20ft. wide. Just to one side a collapsed wooden crane with terminally corroded iron fittings. There seems to have been just one gear reduction and a simple crank handle. Two tiny square chog holes cut in the ceiling above would have held the top bearing. No other chog holes seem to have been made elsewhere in the ceilings.

A surprising feature exists in the floor of one short heading off a main roadway. This is a vertical shaft about 6ft wide and of considerable depth which an explorer with inadequate light might easily blunder into and be killed. Beside it are two small iron wedges left on a ledge in the wall and a heavy iron "jumper bar" for moving stone blocks. This is round and tapering at one end, thicker square section at the other with an angled nose. Initials are incised on it. Another short tapered piece of heavy square section iron lies on another ledge. One end of this is neatly domed, the other flat.

The smaller, walled up entrance has a long passage partly backfilled but passable, extending to the left ending in a heading. A less regular route extends to the right with more heaped up waste stone pieces. Evidence of foxes is all around. A curious stack of carved round stone pieces lies at the end. These look superficially like slices of wooden logs.

Very thin slabs of stone sawn expertly from the sides of blocks to square them are still stacked against some walls. A few littered about pieces of imperfect stone capping further suggest finished work was done underground on a routine basis. The stone beds appear to be closely faulted preventing winning of massive blocks. This may explain the general absence of cranes, use of small carts and making of finely cut and carved pieces on site blocks

The ceilings are for the most part intact, with just a few minor falls and dubiously loose slabs sagging. Tree roots hang down from numerous cracks. Climbing up the backfill and shining a lamp along under the ceiling shows large areas of worked out headings are lost now. We can only guess what relics from those times may lie buried there. It seems likely the two now separate workings were once joined via these blocked passages.

Numerous bats flutter about the lower end of the approach roadway at dusk in the summer, feeding on insects which gather in clouds under the trees. Although none have actually been seen roosting underground there, it seems very likely they hibernate in the quarry during winter. Few signs of recent human activity are visible, compared to many old Bath Stone quarries.

Footnote: The quarry was surveyed and details deposited in Bristol Public Library. The shaft (or well, as it is sometimes has water at the bottom) is 20 feet deep

Reminder: Underground exploration needs permission from the landowner.

Brian Clarke

CIVIL ENGINEERING HERITAGE UNDERGROUND

In 1971 the Institution of Civil Engineers established a Panel for Historical Engineering Works, whose task since has been the compilation of files, deposited in the Institution's library, for structures selected as HEWs on the basis of their 'technical interest, innovation, durability, and aesthetic qualities.' The Institution's publishing company, Thomas Telford Ltd., has published a series of books under the general heading Civil Engineering Heritage which, in four volumes, now covers the whole of England and Wales except the London area. Further volumes for London, Scotland, and Ireland are in preparation.

The HEW classification, of course, predates the Association for Industrial Archaeology's Index Record for Industrial Sites (IRIS), and appears to ignore the Scheduled Ancient Monument status of at least some of the structures described in the published volumes. True to its civil origins, the ICE by and large does not deal with military or defensive structures which might otherwise have been thought to qualify for inclusion - one thinks of the Western Heights at Dover, the Medway and Portsmouth forts, the Chilmark and Monkton Farleigh ammunition stores and their related railway systems, and so forth.

Approximately 40% of the structures listed in the four volumes are bridges, and another 10% or so are buildings of one kind or another, including not a few lighthouses, railway stations, etc. Of the approximately 875 sites listed, 44 are tunnels, but fewer than half a dozen are mines or underground quarries. The complete list of specifically underground or directly underground-related sites is as follows

AREA	HEW NUMBER	NGR
THE BORDER		
Nil		
TYNE AND WEAR		
Nil		
COUNTY DURHAM & CLEVELAND		
Nil		
YORK AND NORTH YORKSHIRE		
Roman sewer, York	218	SE 604517
Grosmont [horse]tunnel	3	NZ 827051
CUMBRIA		
Nent Force level	398	NY 719468-783436
SOUTH AND WEST YORKSHIRE		
Richmond Hill [railway tunnel]	234	SE 314334
Bramhope [railway tunnel]	16	SE 242408-256438
Elsecar colliery pumping engine	220	SE 388006
Woodhead [railway] tunnels	235	SK 114999-157023
Standedge [canal/railway] tunnels	12	SE 007082-039118
Summit [railway] tunnel	1003	SD 940208-946182
LANCASHIRE AND ISLE OF MAN		
Nil		
MERSEYSIDE AND GREATER MANCHESTER		
Wapping and Crown Street [railway] tunnels, Liverpool	953	SJ 345894-369893
Bridgewater canal [and coal-mine levels]	976	SD 749005
NORTH WALES		
Coastal defences[Penmaemawr railway tunnel and avalanch shelters]	1228	SJ 2078-SH6876
Dinorwig pumped storage scheme [underground power station]	1236	SH 598607
Blaenau Ffestiniog railway tunnel	755	SH 688503-697469
Llechwedd slate caverns	1169	SH 698475
Chirk canal tunnel	162	SJ 285376
MID-WALES		
Nil		
SOUTH WALES		
Nil		
AVON AND NORTH WILTSHIRE		
Bristol waterworks [including 4 miles of tunnels]	1242	

Sapperton [canal] tunnel	629	SO 943033-966006
WEST MIDLANDS AND SOUTH STAFFORDSHIRE		
Netherton [canal] tunnel	669	SO 954883-967908
Dudley [canal] tunnel	670	SO 933892-947917
Shugborough [railway] tunnel	1126	SJ 981216-988216
SHROPSHIRE		
Nil		
CHESHIRE AND NORTH STAFFORDSHIRE		
Harecastle [canal] tunnels	54&465	SJ 849517-837541
DERBYSHIRE AND NOTTINGHAMSHIRE		
Totley [railway] tunnel	671	SK 251788-306802
Hillcarr sough	66	SK 257637
Yatestooop sough	855	SK 264626
Meerbrook sough	1721	SK 326553
HUMBERSIDE AND NORTH LINCOLNSHIRE		
Nil		
SOUTH LINCOLNSHIRE AND CAMBRIDGE		
Nil		
NORFOLK AND NORTH SUFFOLK		
Grimes Grave [flint mines]	472	TL 818898
SOUTH SUFFOLK AND ESSEX		
Nil		
HERTFORDSHIRE, BEDFORDSHIRE & NORTH BUCKINGHAMSHIRE		
Potters Bar and Hadley Wood [railway tunnels]	1922	TL 256004-TQ 261994 TL 262987-TQ 262985 TL 262981-TQ 262978 TL 309052-315077
Ponsbourne [railway] tunnel	1923	
LEICESTERSHIRE AND NORTHAMPTONSHIRE		
Kilsby [railway] tunnel	55	SP 578698-565714
Crick [canal] tunnel	1729	SP 592707-595721
Braunston [canal] tunnel	39	SP 557655-575652
Blisworth [canal] tunnel	47	SP 729529-739502
WARWICKSHIRE AND NORTH OXFORDSHIRE		
Shrewley [canal] tunnel	707	SP 214672
Fenny Compton [canal] 'tunnel' (opened out)	38	SP 433525-442520
THE ISLES OF SCILLY, WEST AND CENTRAL CORNWALL		
Great County adit	1086	SW 7045-7745 SW 7040-7740
East Pool Pump, Taylor's shaft	880	SW 674418
East Pool whim. Michell's shaft	879	SW 672415
THE TAMAR VALLEY AND PLYMOUTH		
Tavistock canal [incl. tunnel]	668	SX 448703-462723
CENTRAL AND EASTERN DEVON		
Underground [water supply] passages, Exeter	1175	SX 926935-923928
SOMERSET AND MID-WILTSHIRE		
Nil		
DORSET AND SOUTH WILTSHIRE		
Charmouth [road] tunnel	980	SY 349948
Beaminster [Horn Hill road] tunnel	899	ST 468032
HAMPSHIRE AND ISLE OF WIGHT		
Portsmouth main drainage	504	SU 674992
SUSSEX AND SOUTH SURREY		
Merstham old [railway] tunnel	1530	TQ 288558-291542
Merstham quarry line [railway] tunnel	1635	TQ 289558-292539
Bletchingley [railway] tunnel	1531	TQ 333487-345486
Clayton [railway] tunnel	503	TQ 293126-297141
Brighton water supply	505	TQ 286066
Brighton and Hove main drainage	499	TQ 280045-393013
KENT		
Polhill [railway] tunnel	1610	TQ 494623-506603
Sevenoaks [railway] tunnel	1394	TQ 526544-535515
Strood and Higham [canal then railway] tunnel	486	TR 717724-740697

Abbotscliff [railway] tunnel
Shakespeare Cliff [railway] tunnel

1393
485

TR 268385-285389
TR 303397

The published volumes are ..

- M.F. BARLEY (edr.), Civil engineering heritage: northern England, Thomas Telford Ltd., ix + 178pp, 1981 ISBN 0 7277 7
E.A. LABRUM (edr), Civil engineering heritage: eastern and central England, Thomas Telford Ltd., 282pp, 1994 ISBN 0 1970 X
R.A. OTTER (edr), Civil engineering heritage: southern England, Thomas Telford Ltd., vi +293pp, 1994 ISBN 0 7277 197

MAN-MADE AND MAN-USED UNDERGROUND STRUCTURES IN SCOTLAND

Geology

The principle rocks of Scotland range from extremely ancient Pre-Cambrian metamorphic and sedimentary formations in the north-west and Highlands, through important Cambrian, Ordovician, and Silurian limestones, greywackes etc. especially in southern Scotland, to Carboniferous limestones, sandstones and coal measures, especially in central Scotland (Fife and the Midland Valley, between Edinburgh and Glasgow.) There are relatively small areas of Jurassic strata, for example in the North East and in the Isle of Skye, and a small outcrop of Cretaceous sandstone on the west coast.

Artificial and elaborated 'Caves'

Some genuinely ancient man-made caves, with ancient carvings, are known on the coast in the general area of Kirkcaldy and Wemyss (north of Edinburgh.) These are carved in sandstone, as are others on the Auchlinleck estate (18th century) in Ayrshire (about 20 km west of Ayr, on the west coast.) There is also an elaborately excavated 'cave house' at Gilmerton, in the south-eastern suburbs of Edinburgh (also in sandstone.)

Lead Mines

Important lead mines and mining remains are to be found in the Strontian area, about 35 km south west of Fort William (also famous as the locality where the element Strontium was discovered.) More accessible, with a good mining museum open to the public (including an underground tour) is the lead mining area at Leadhills (Lanarkshire) and Wanlockhead (Dumfriesshire), about 48 km north of Dumfriess. These are the two highest villages in the British Isles.

Iron Mines

There were quite extensive iron ore mines on the island Raasay (between the Isle of Skye and the mainland), operated c. 1912 - 1942, which have recently been researched, and a book published.

Coal Mines

Scotland once had very large numbers of coal mines, in several large and numerous small coalfields, most of which were in the 'central valley' between Edinburgh and Glasgow, or a little to the north of this. Smaller coalfields were worked elsewhere, as for example in Ayrshire. By 1991 only one large coalmine remained in operation by

British Coal, that at Longannet near Kincardine. There were also about 10 small privately operated coal mines working in various places. An unusual coal mine, worked privately in Jurassic rather than Carboniferous coal seams, once operated at Brora on the north east coast, but this closed at some time in the last 30 years.

Limestone Mines

There are numerous very large limestone mines, worked for limestone for the iron smelting industry, especially in Fife (north of Edinburgh), and south and south east of Edinburgh. Others are to be found south of Falkirk, and in Dumfriesshire. Smaller limestone mines were probably for agricultural lime.

Fireclay and Ganister Mines

Fireclay and ganister are pure clays and sandstones formed as 'seat-earths' in which the trees grew which later became fossilised as coal. These fireclays and ganisters have excellent refractory properties, and were often also taken from coal mines. They were used for furnace linings, gas works retorts, crucibles, glass furnaces, and the like. There is a fireclay mine open to the public near Bo'Ness, north of Linlithgow.

Oil Shale Mines

Oil shale containing keragen was extensively mined near Edinburgh in former years. Destructive distillation of the shale in gas-fired retorts produced mineral oils used for lighting, similar to paraffin, and other purposes. Large red mounds of burned oil shale waste (locally called 'bings') can still be seen to the west of Edinburgh. Oil shales no longer mined.

Building-Stone Quarries

Building-stone quarries were worked underground at several places near Edinburgh and Glasgow, in sandstone. Underground quarries are known at Huntershill, Bishopbriggs, near Glasgow; also at Giffnock (near Glasgow); quarry galleries up to 15 metres high are recorded.

Alum

Alum (potassium aluminium sulphate), used in the dyeing industry, was formerly extracted from waste shale from coal mines near Glasgow.

Barytes

A barytes (barium sulphate) mine once operated on the island of Arran, west of Glasgow. Some has been mined recently at Foss Mine, Aberfeldy, Tayside.

Sand

Very pure Upper Cretaceous sand is still mined at Loch Aline, on the west coast, for the manufacture of optical glass.

Honestone Mines

Honestones, for sharpening steel tools, have been mined recently at Sundrum mine and Quilkiestone mine, both in the Strathclyde region.

Canal Tunnels

There are several canal tunnels, of which the one just south of Falkirk is readily accessible as a public footpath runs through its' length.

Railway Tunnels

As a result of the numerous hills and mountains, Scotland has many railway tunnels, not least in the Edinburgh and Glasgow conurbations, although no really important ones to compare with the major or early railway tunnels in England. Glasgow has a very simple (one circular route) underground metro system.

Pedestrian and Road Tunnels

There is a pedestrian tunnel under the river Clyde in Glasgow, and a road tunnel a short way downstream.

Underground Power Station

The Cruachan hydro-electric power station caters for public visits to the underground turbine hall. Various other hydroelectric installations, in connection with an aluminium smelting works near Fort William for example, have tunnels to convey water to the turbines.

A tunnel that never was

For many years, and certainly between 1886 and 1901, there was serious thought given to an 'Irish Channel Tunnel' to link Ireland with Scotland. The shortest route (Antrim to the Mull of Kintyre) was rejected as it would have led to a very circuitous railway connection with Glasgow; the tunnel would have been below sea for 12.5 miles. A route from Carrickfergus to Stranraer was favoured, which would have meant a 55 km tunnel, with 40 km below the sea.

Further Information

Subterranea Britannica can supply further information on all classes of Scottish subterranean structures. The Grampian Speleological Group should also be consulted (based in Edinburgh.) Important material has been published especially on the coal mining, oil-shale mining, lead and barytes mining, and Rassay iron mines. Numerous limestone mines are open and accessible. There are museums more or less connected with mining at Wanlockhead (lead), Prestonpans (coal), and Bo'Ness (fireclay.)

Paul W. Sowan

UNDERGROUND IN ICELAND

Iceland is a large island (about 500 km from east to west) with a small population (approaching one third of a million persons.) Large parts of Iceland are more or less uninhabitable, and certainly uninhabited - dissected upland mountain areas, ice caps, recent lava flows, glacial sands, and stony deserts. The great majority of the people live in Reykjavik or adjoining towns in the south-west; the remainder in coastal fishing villages and towns (there are hardly any inland towns.)

Lava caves

The most significant caves of any kind are natural lava caves, found in recent lava flows. Some of these have been used by man. The most famous caves are at Surtshellir in the Hallmundarhraun lava flow, just to the west of the westernmost large ice cap (Langjokull.) The Surtshellir caves have been described by travellers in the published literature from the 18th century onwards and were reputedly used by outlaws.

Small lava caves at Myvatn in NE Iceland have been used as sheepfolds, and for the storage of potatoes.

Most lava caves, however, are too wet (rain penetrates cracks in the lava very easily) for inhabitation.

Man-made Caves

Iceland has very little sedimentary rock. Two rock types, however, have proved to be amenable to small-scale human tunnelling during previous centuries - consolidated glacial sand deposits, and palagonite tuff (shock-cooled subglacially erupted basalt) Some 200 formerly inhabited or man-used caves carved out in these 'sandstone' texture rocks are known, most of them in the mid-south of Iceland. Some are demonstrably ancient (Iceland has been settled since the 9th Century), with old carvings. Some were still inhabited into the 1920s. Many were used for winter storage or animal shelters. A comprehensive survey (in Icelandic, but with excellent plan and illustrations) has recently been published.

Mines

There are many references to 'sulphur mines' from the Middle Ages onwards, but these were almost certainly only open pits. The sulphur was exported for gunpowder manufacture (competing with Sicily), and Iceland's sulphur was sufficiently important strategically for the USA to contemplate purchasing the entire country in 1867! None is worked now. Poor coal, or lignite, was mined from thin seams between lava flows in the NW fiords, and in the Tjornes peninsula (North of Husavik), mainly during the First World War when imported coal was scarce. Iceland spar (calcite) for optical instruments was 'mined' at Helgustadir in Reydarfjordur, eastern Iceland, although the underground working appears to have been little beyond minor undermining at the bottom of a large open pit.

Road Tunnels

Large stretches of the western, north-western, mid-northern, and eastern coasts are mountainous and heavily

indented by fiords. Several, mainly short, road tunnels have been driven through headlands or below mountains to connect otherwise isolated fishing villages with the main road network - mainly in the Isafjordur area in the NW fiords, and southwards from Olafsfordur in the mid-north (a road was made around the headland south of Olafsfordur in 1965, but has subsequently been bypassed by a tunnel at a lower level.) Several further ambitious road tunnel schemes are currently under consideration including one under Hvalfjordur, to shorten the main trunk road to the north.

Paul W. Sowan 21 Nov. 1993

HORN HILL TUNNEL

Book review

Marie de G. Eedle, Horn Hill tunnel, Beaminster: privately published, 26pp, 1994 (ISBN 0 9512205 2 71)

Horn Hill tunnel (Dorset) is amongst the earliest English road tunnels, predating (1832) most railway tunnels though not the Tyler Hill tunnel (1830) on the Canterbury & Whitstable Railway. By the 1830s, of course, tunnelling was well established both in mines and underground quarries, and on the canal network. Horn Hill and other early road tunnels represent an attempt to introduce advanced civil engineering to the road network, but of course the initiative passed to the railways which retained the lead for the remainder of the century.

The Bridport 2nd District Turnpike Trust planned, organised, and financed the making of the 115 yard tunnel from 1828 onwards, with actual construction (through Upper Greensand) in 1831-32, it shortened the route from Beaminster to Crewkerne, and by-passed the steep final stretches of road over the top of the ridgeway at Horn Hill. The original Bridport - Crewkerne road had been turnpiked under Acts of 1754, 1765 and 1819, and the tunnel and associated road diversions were constructed under a further Act of 1880.

Turnpike records and statutorily required deposited plans have been supplemented by Marie Eedle by additional sources and careful research to examine and present a rounded picture of the persons who planned, financed, and constructed the tunnel, which represented a significant investment on the part of numerous residents of Beaminster, and the social and geographical context at the time.

Interesting links with other early tunnels have been brought to light. Michael Lane, civil engineer at Horn Hill, had worked under the Brunels at the Thames Tunnel (commenced 1825.) A William Constable, responsible for surveying at Horn Hill in 1829 - 30, may perhaps be the same William Constable who had been similarly employed in connection with the Reigate (Surrey) road tunnel which opened in 1823. And Thomas Chambers Hine, architect, responsible for the Park Tunnel at Nottingham (1855) was a grandson of one Thomas Hine of Beaminster. Disappointingly little is said about the other early road tunnel, opened six months earlier, made by the Bridport 1st District Turnpike Trust on the Charmouth road (although there is a photograph of it), or

about the failed Highgate road tunnel which, on its falling in during its construction (1812), was opened out and replaced by the since-demolished 'Highgate Archway' (a constructed arch over the opened-out cutting, although at this date tunnels proper were often also called 'archways'.)

This is a well-researched and (some typographical errors which escaped proofreading apart) very well presented booklet, carrying essentially local research but drawing widely, also, on non-local resources including a descendent of Michael Lane now resident in Alaska! There are illustrations (two in colour), a good sketch plan, and a properly detailed list of sources. The exceptionally attractive cover carries an excellent coloured oblique air photograph of the tunnel as seen from the north, which very effectively illustrates the tunnel in its geographical setting.

Copies of the booklet may be ordered at two pounds 50p (inclusive of postage), from the author at 2 Culverhayes, BEAMINSTER, Dorset DT8 3DG.

Paul W. Sowan 19 Aug. 1994

SECRET TUNNELS AT CLIVEDEN AND BISHAM ABBEY

Cliveden, former home of the Astor family was a mansion built in 1850 but it is on the site of a previous mansion built by George Villiers the second Duke of Buckinghamshire. Nowadays the mansion is an exclusive hotel but the grounds and gardens are controlled by the National Trust and are open to the public.

Early in the year, National Trust contractor, Frank Bartlett, broke into a secret tunnel in the garden while laying a cable. It is described as giving access to two underground rooms and steep steps lead out of it although the system had not, at the time of reporting, been fully excavated.

The Maidenhead Advertiser, February 18 1994, also says the National Trust hope to open the tunnel for visitors for Easter (1994). Does anyone have any information about this ?

It is theorised that the tunnel may have been for fruit or vegetable storage or simply to hide estate workers away by requiring them to perform some of their work underground. Up to recent times the ordinary person was considered to make beautiful country estates untidy.

With regard to Bisham Abbey it was first founded by the Knights Templars in the 12th century but is now the National Sports Centre run by the Sports Council.

A secret passage was discovered by workmen in 1901 but re-bricked up. Miss Margaret Dickinson related to the Maidenhead Advertiser, 25 Feb. 1994 how builders reopened it in 1970 and how she explored it herself. Sadly it is now filled because of heavy traffic passing in front of the Abbey.

The tunnel is described as brick and stone lined with niches. Photographs were taken and one is reproduced in the newspaper. For some reason no-one seems to have gone to the very end of the tunnel but police divers practising in the moat seem to have found the 'water-gate' in the '60s.

THE CURVED SWASTICA

The curved swastika (or whirligig) incised in the underground workings at Chaldon Quarry (Sub.Brit.Newspaper No 12), is as the writer says, an ancient symbol associated with churches and holy places. But what may not be generally known, is it also had a secular function as an answer to a puzzle in Victorian books of pastimes and riddles. The wording of the puzzle varies in detail depending upon the book in which it is posed, but it usually goes something like this: The central dot in figure 1 represents a pond in the middle of eight cottages represented by the rest of the dots. The inhabitants of the four cottages A,B,C and D have been granted exclusive rights to the pond and they are determined to keep their neighbours in cottages E,F,G and H away from it. To effect this they decide to build wall which will enclose their own cottages and the pond and exclude those of the other cottagers. What form must their wall take in plan? The answer is of course the curved swastika in figure 2.

By drawing attention to this Victorian usage of the curved swastika I do not wish to suggest that ancient examples of it are merely the graphic end product of idlers amusing themselves with geometrical diversions. The contexts in which the curved swastika has been found and its widespread distribution among the ancient pagan and more recent Christian peoples of Europe suggests deeper meaning(s). But the very fact of the existence of this frivolous secular Victorian example provides a salutary warning to all who venture to date and interpret enduring symbols.

Bari Hooper 14 May 1994

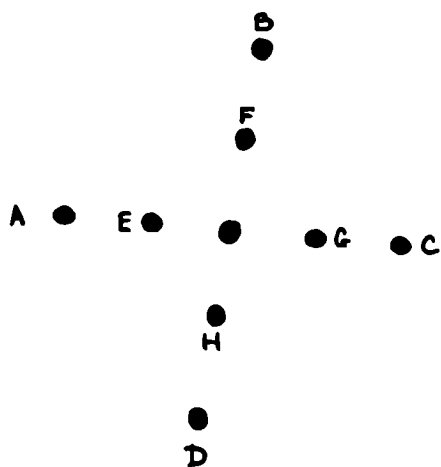


FIGURE 1

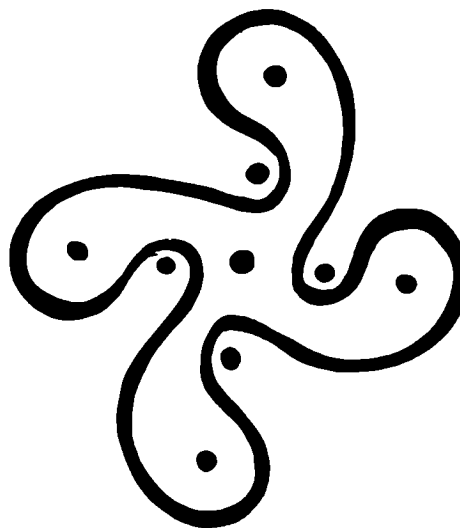


FIGURE 2

BOOK REVIEW

Elizabethan copper. The history of the Company of Mines Royal 1568-1605. M.B. Donald. Red Earth Publications, 1994. 405pp+vii
Paperback, £13.99.

The Company of the Mines Royal was the first company to be formed in England for the manufacture of an article (copper) as distinct from companies formed for trading purposes only with other countries. It owned its' formation to a letters patent granted by Queen Elizabeth I to the English entrepreneur Thomas Thurland and the German mining expert Daniel Hochstetter in 1564. (A letters patent, in this context, is an unsealed letter from a sovereign which grants a monopoly to a group of subjects.) The monopoly allowed Thurland and Hochstetter and their assigns to mine gold, silver, copper and mercury for ever in York, Lancaster, Cumberland, Westmorland, Cornwall, Devon, Gloucester, Worcester and Wales. The Queen would receive a considerable proportion of the profits herself.

The focus of the book is chiefly on Cumberland where the company dug and smelted copper ore. The first refined English copper was produced on 29 Sept. 1567 but the process also produced silver. The company's operations in Cornwall are also discussed but to lesser degree.

The conception and promotion of the company was due to the thoroughly disreputable cleric Thomas Thurland who spent most of his time dodging creditors and debtor's prison. On being appointed hospital administrator he started to sell off the hospital's assets for his own enrichment and after being asked to look after the silver of St. Paul's Cathedral (as a consequence of a fire) he promptly pawned it.

But he was a friend of the Secretary to the Queen, William Cecil, and this helped in his scheme to prospect England for minerals with the German expert Daniel Hochstetter in 1563. Germany was the international centre for copper mining and smelting and in England we saw no reason to compete by studying the technology and building up the required skilled labour force. Consequently if copper production was to be established in England the importation of German technology and labour would be required. The murderously savage Lake District natives could only be used as cheap unskilled labour.

The Company as formed consisted not only of Thurland and Hochstetter but of 24 shareholders who acted as directors. They consisted of bankers, lawyers, admirals, slavers, forgers, philanderers, hypocrites etc. - as fine a body of men as ever bemused the Serious Fraud Office. The ostensible idea of this large Company was that the directors would takes pains to become conversant with the German techniques and pass them on to succeeding generations of English. This never happened - when the originators of the company and its work-force passed away the company died.

This book, written by a former professor of Chemical Engineering turned history researcher, is a reprint of the classic from 1955 and tells the whole story in detail. It is essential reading for the serious student of the history of mining but with large chunks of Elizabethan text it is not easy to read. However because of the incredible amount

of information it contains the effort will be well rewarded. Not only does it give details of all involved in the adventure (including a list of the German miners who came to Keswick) it also includes details of all the extraction and refining methods employed.

There are possibly two critical comments to make on this otherwise marvellous book. Firstly there are no concessions to easy reading (a precis would be worth publishing) and secondly it tells us nothing about conditions underground. Nevertheless buy it! You won't get a better bargain.

BOOK REVIEW

The red hills. Dave Kelly. Red Earth Publications, 1994. 176pp. Paperback £9.99

Florence in West Cumberland worked by the Egremont Mining Company, small as it is, is claimed to be the last working iron mine in Europe. It is also the last remains of a once flourishing haematite mining industry which started in 1861 and peaked at the time of WWI. Areas of West Cumberland were affected by the red haematite dust and hence the title of the book.

The haematite was phosphorous free which yielded iron suitable for the Bessemer steel making process, added to which there were nearby deposits of limestone and coal with the result that a local iron and steel making industry came into being.

The book give details of 13 groups of iron mines formerly worked in the area. The details are of the birth, development and final abandonment of the sites. Sketch maps are provided for each area but no National Grid References are quoted and little is said of the present day conditions of the sites. (As all remains are steadily vanishing perhaps there would be little point.) There is very little about the underground itself and although there is a useful biography at the end of the book there are no references to documentary sources. This despite the fact that the book is built from such sources.

There are chapters on the Mines Masters and the organisation of the workers into Trades Unions; although not in depth. Geology is covered in a cursory fashion.

There are pros and cons for this book.

The reason for buying it is that it contains a wealth of detail about individual mines and groups of mines. This sort of original research needs to be done on other iron mining areas in England and the author should be congratulated on the material he has amassed.

The principle problem with the book is, that unless you are devoted to the mines of West Cumberland or details of iron mines in general, you will probably not find most of the book too stimulating. (If you are so devoted you will need the book.) Those of us who have researched mines in our own locality know the difficulties of producing a book which will attract a wide range of readers with a continuous interesting narrative. This book has not solved the problem.

To summarise. The research effort in the book requires that specialised collectors, (such as we have in Sub. Brit.) and libraries will need to buy it. However the appeal that Red Earth books usually have for a wider readership maybe lacking.

INFORMATION NEEDED ON THE FOLLOWING REGIONAL GOVERNMENT HEADQUARTERS OF ENGLAND AND WALES WHICH ARE FOR DISPOSAL BY HOME OFFICE.

SHIPTON Shipton by Beningbrough, Near York, North Yorkshire. Mowlem Facilities Management, Gateshead 091 491 1114

SKENDLEBY Skendleby, Near Spilsby, Lincolnshire. Mowlem Facilities Management, Leeds 0532 303000

BAWBURGH Watton Road, Bawburgh, Near Norwich, Norfolk.

Mowlem Facilities Management, Cambridge 0223 277774

BEDFORD Days Lane, Biddenham, Bedford .Mowlem Facilities Management, Cambridge 0223 277774

KELVEDON HATCH Kelvedon Hall Lane, Kelvedon Hatch, Near Brentwood, Essex. Mowlem Facilities Management, Cambridge 0223 277774

KINGSTANDING Kingstanding, Near Crowborough, East Sussex .Unicorn Estates Consultancy, Portsmouth 0705 822341

CHILMARK RAF Chilmark, Near Salisbury, Wiltshire. Unicorn Estates Consultancy, Bristol 0272 764000

HOPE COVE Crown Building, Soar, Gull Perch, Hope Cove, Devon.

Unicorn Estates Consultancy, Bristol 0272 764000

BRACKLA Brackla, Brackla Tunnels, Bridgend, Mid-Glamorgan.

W S Atkins Property Services, Cardiff 0222 485159

PRESTON Longley Lane, Goosnargh, Preston, Lancashire PR3 2JQ.

W S Atkins Property Services, Preston 0772 741174

HACK GREEN French Lane, Near Nantwich, Cheshire.

W S Atkins Property Services, Warrington 0925 828987

BAWSEY, Suffolk. (Details for this rotor station not yet known.)

BUS DIVES INTO HOLE

In Munich the road under a bus collapsed causing deaths when the bus plunged into the cavity so produced. An underground railway was under construction below. The catastrophe was compounded by the hole filling with water from a broken water main.

Daily Mail 22 Sept. 1994

STEPHENSON'S VAULTS AT CAMDEN TO BE SAVED

Camden Goods Yard is discussed in Secretary's Newsletters 6 and 7. A pit with water is described and considered to be the site of Stephenson's cable winding engine which has been inaccessible since 1840. There is news that this has now been pumped out revealing a system of vaults which is of interest to Camden's planning committee. Planning permission and listed building consent is expected for leisure purposes.



SEWERS ARE IN THE NEWS

Bristol has always caused a sewage problem. The brick sewers built during a period beginning 1845 merely deposited the sewage into the River Avon. By the 1930s the stink from the river was so bad that measures were taken to disinfect it. Plans for an effective sewage system were laid in mid 1950s but the system devised was not completed until this year.

To celebrate the completion of the project, Wessex Water invited the public to view that part of the new northern foul water sewer which is constructed under the River Frome and the M32 motorway. In times of storm Bristol's sewers have previously become overloaded with rain water and the excess foul water had to be jettisoned into the rivers. This new interception sewer catches the overflow resulting from storms in a large area to the north-east of the city - an area stretching from Chipping Sodbury to Bath. The pipes to catch the overflow are more than two metres in diameter and the final destination of the sewage is the treatment plant at Avonmouth which can treat 165 million litres of sewage per day.

In Cambridge Anglia Water have been constructing a system of new sewers needed to cope with present day and future needs. Tunnelling machines were used to excavate tunnels two metres in diameter one of which is under the River Cam. By now the project should have been completed.

THANK YOU AND AN APOLOGY

The editor wishes to thank all who have contributed to this newsletter. All newspaper cuttings are filed in Sub. Brit. archives even if not used in the newsletter itself. If I have used any cuttings from you and not acknowledged you, this is because I have confused myself as to who sent what. Apologies.

Apologies also for the late production of this newsletter. The next one is due out on Feb. 14 1995. The next Bulletin is due out for the new year and the next Day Conference is to be held at Imperial College Sat. 25.3.95